
ENVIRONMENTAL Fact Sheet



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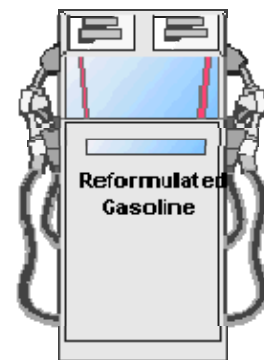
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Reformulated Gasoline *Improving Air Quality in New Hampshire*

Federal Clean Air Act Amendments Aim to Reduce Smog

The federal Clean Air Act Amendments of 1990 require the states to implement numerous programs to reduce ground-level ozone, commonly known as "smog," in areas that exceed the federal health standard for ozone. Ground-level ozone, unlike other pollutants, is not emitted directly into the atmosphere by a particular source. It is formed when hydrocarbons, or volatile organic compounds (VOCs), chemically react with oxides of nitrogen (NOx). Since sunlight and heat stimulate the process, the highest ozone levels occur during the summer months. In New Hampshire, the federal standard for ground-level ozone has been exceeded in the four counties of Rockingham, Strafford, Hillsborough, and Merrimack. These counties are classified as "ozone nonattainment areas."

The Clean Air Act Amendments of 1990 make the control of hydrocarbon emissions a top priority. One of the mandated programs is the use of reformulated gasoline (RFG). Motor vehicles in New Hampshire are responsible for more than half of the hydrocarbon and NOx emissions statewide. These emissions come from either the tailpipe (exhaust emissions) or from evaporation of the fuel itself (evaporative emissions). The Clean Air Act Amendments allow all states with ozone nonattainment areas to opt into the reformulated fuel program, providing that the supply of reformulated gasoline is sufficient. New Hampshire has opted into this program for the four nonattainment counties and reformulated gasoline has been available in these areas since 1995.



What is Reformulated Gasoline?

Reformulated gasoline (RFG) is gasoline that is blended such that hydrocarbon and air toxic emissions are significantly reduced. It is not considered to be an "alternative fuel," gasohol, or part of the oxygenated fuel program. Oxygenated fuel contains higher amounts of oxygen and is required during the winter months in areas with the most serious carbon monoxide problems. The oxygenated fuel program is not required in New Hampshire and has not been implemented in the state.

The requirements of the reformulated gasoline program, as outlined in the Clean Air Act Amendments, are as follows:

- The aromatic hydrocarbon content of the reformulated gasoline (benzene and its derivatives) shall be reduced to no more than 25 percent by volume, as opposed to 32 percent presently.
- The benzene content itself must be reduced to 1 percent from an average value of 1 to 1.5 percent presently.
- Reformulated gasoline must include an oxygen content of 2 percent by weight.
- Reformulated gasoline will not have any heavy metals, including lead and manganese.
- Reformulated gasoline will contain detergent additives to prevent the accumulation of deposits in engines or vehicle fuel supply systems.
- The Reid Vapor Pressure (a measure of how quickly fuel evaporates) of reformulated gasoline must be reduced during the summer.

Overall, reformulated gasoline must result in a 15 percent reduction in hydrocarbon and air toxic emissions from vehicles--a 9 percent reduction in exhaust emissions and a 6 percent reduction in evaporative emissions. Furthermore, the Clean Air Act Amendments prohibit any increase in NOx emissions, which is a common problem with oxygenated fuels. In 2000, hydrocarbon and air toxic emission reductions from reformulated gasoline were increased to 25 percent.



The reformulated gasoline program is a very cost effective program for the reduction of hydrocarbon and air toxic emissions. The program is administered by the U.S. Environmental Protection Agency (EPA), so there are no administrative costs to New Hampshire. According to EPA, the estimated cost increase to produce reformulated gasoline is only a few cents per gallon due to the refining of the gasoline. However, the overall cost of this program is less than the cost of some alternatives, such as imposing stricter controls on the manufacturing and industrial facilities in the state.

General and technical information on reformulated gasoline is available at www.epa.gov/otaq.

For additional information, contact:

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